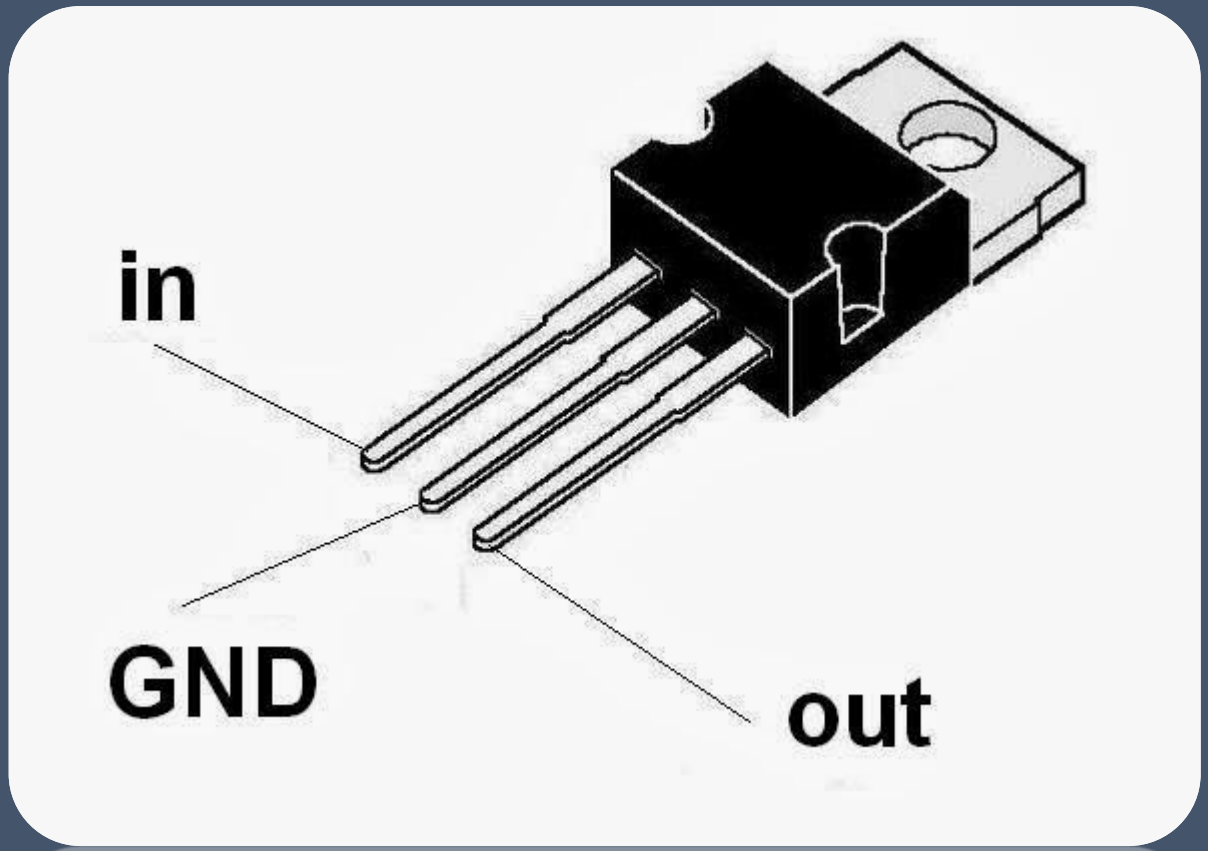


PRESENTATION ON L7812CV VOLTAGE REGULATOR

GROUP NO : 19

CONTENT DELIVERY

MD. TAZEL HOSSAN

ID NO : 1921

MANAS SARKER AKASH

ID NO : 2321

MD. NAZMUL ALAM KHAN

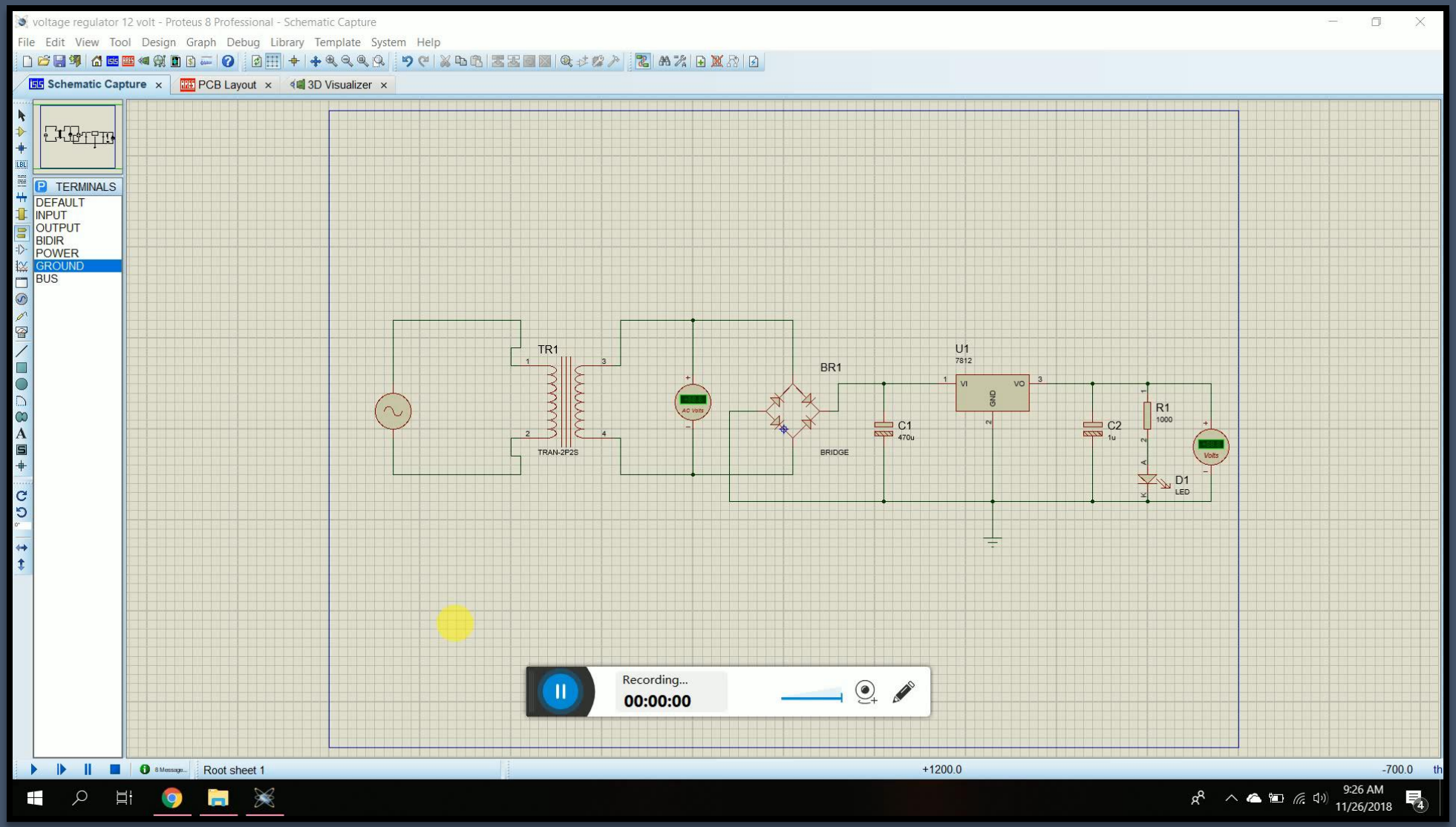
ID NO : 1941

Department Of Computer Science & Engineering

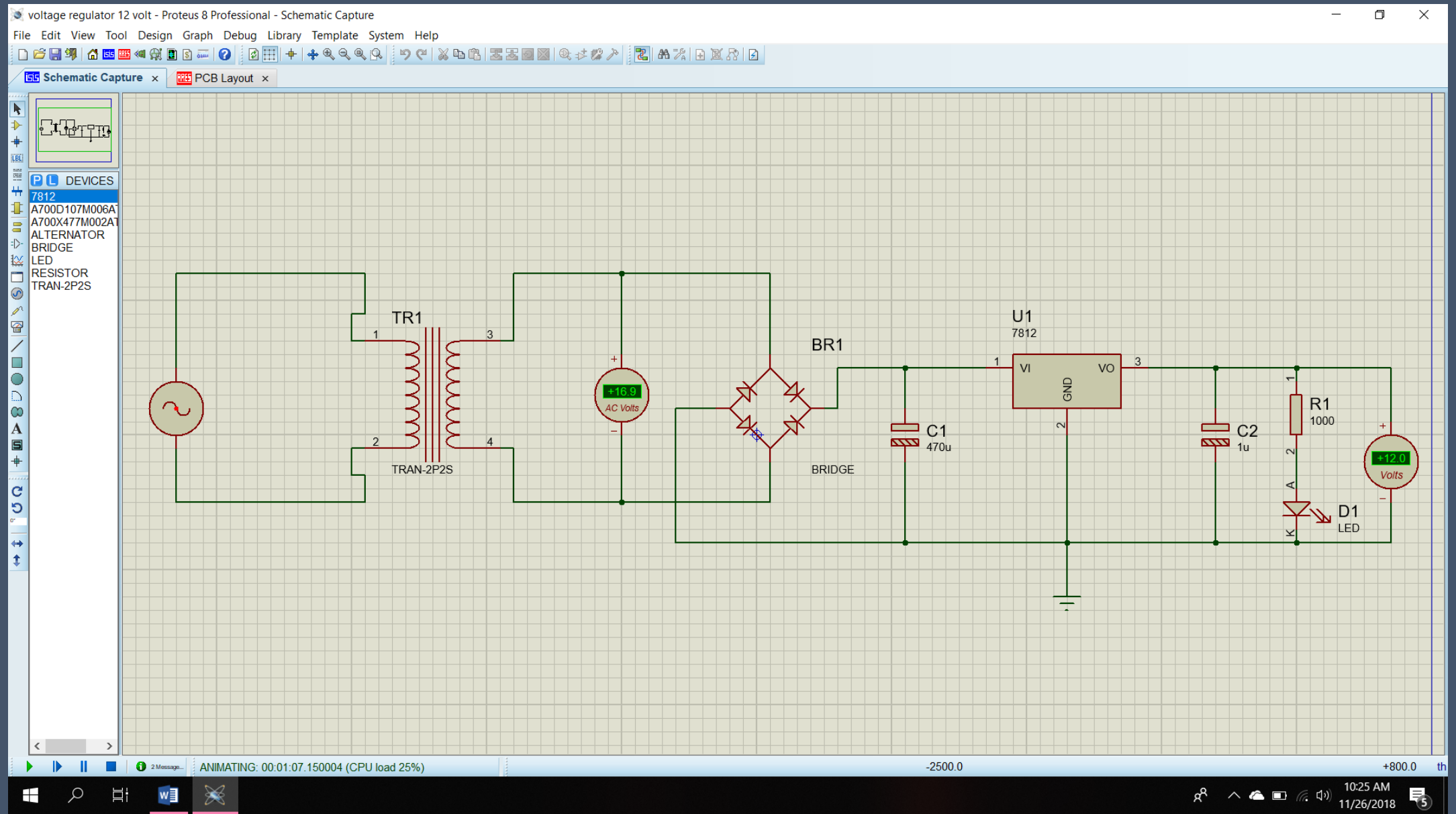
BRIEF INTRODUCTION

- It is a type of positive linear voltage regulators used for voltage regulation.
- It is a three terminal adjustable voltage regulator and easy to use because to set the output voltage it requires only two external resistors in L7812 voltage regulator circuit.
- It is majorly used for local and on card regulation.
- If we connect a fixed resistor between the output and adjustment of L7812 regulator , then the L7812 circuit can be used as a precise current regulator.

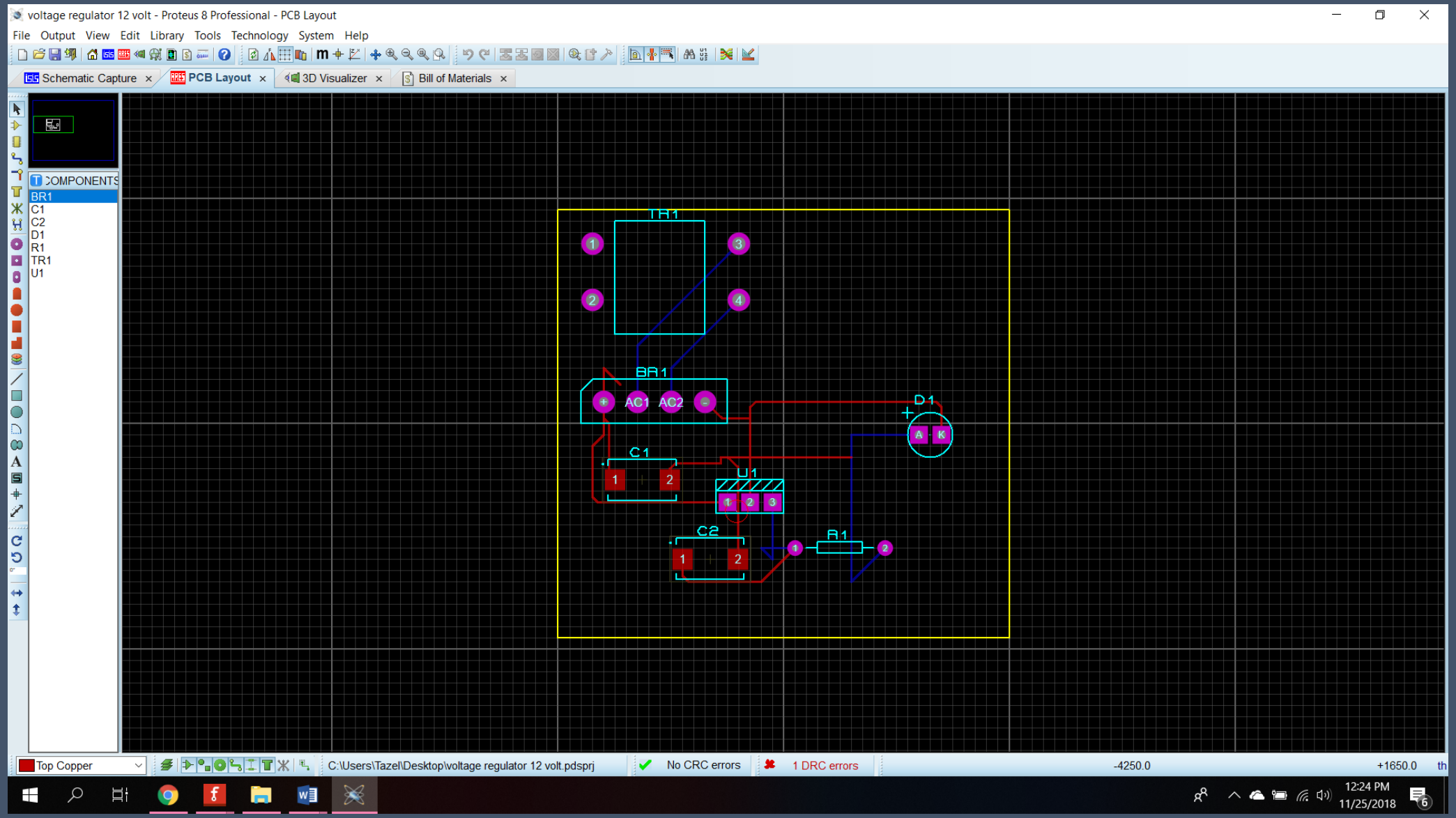
SIMULATION OF L7812CV VOLTAGE REGULATOR IN PROTEUS



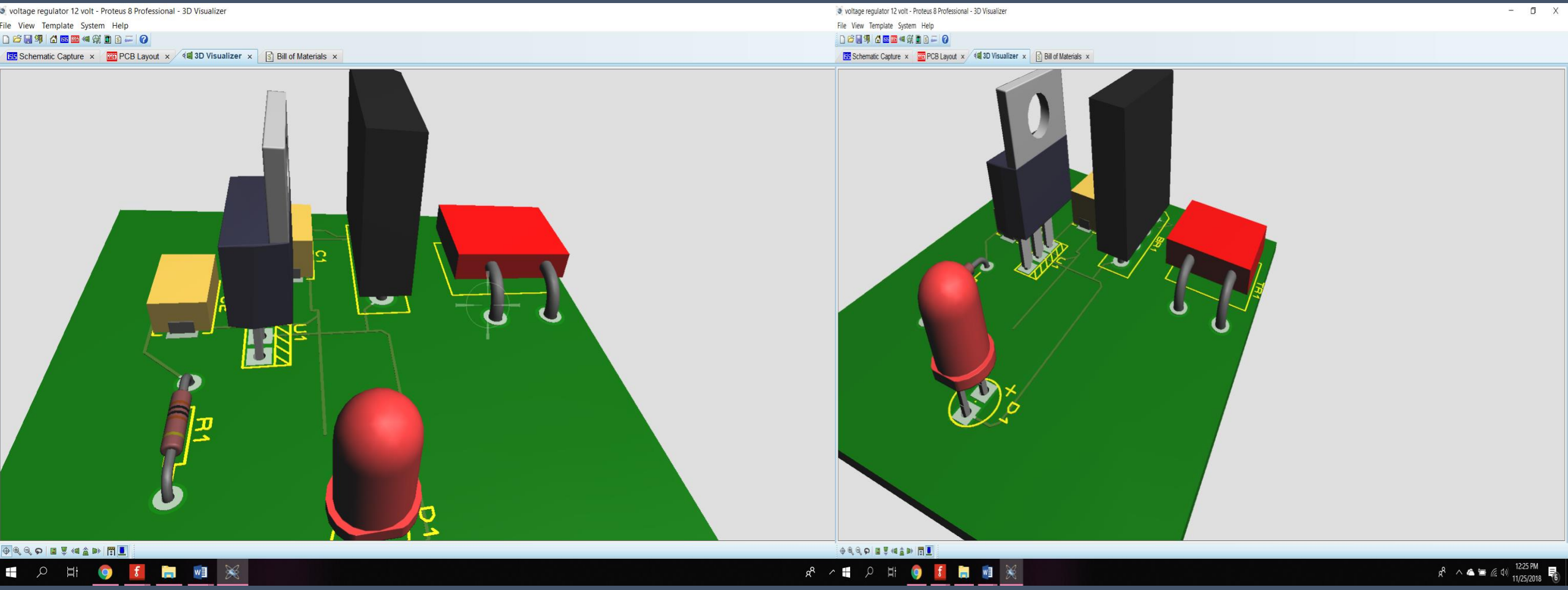
SIMULATION OF L7812CV IN PROTEUS



PCB LAYOUT OF L7812CV



3D VISUALIZER OF L7812CV VOLTAGE REGULATOR

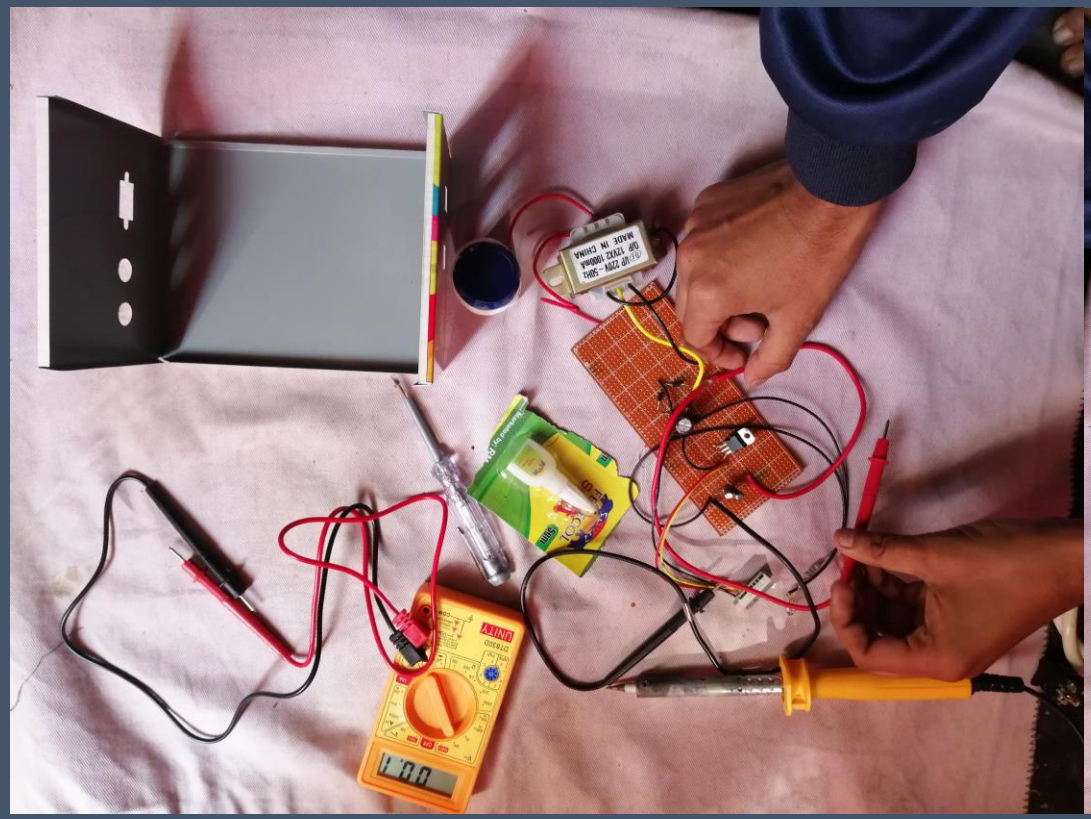


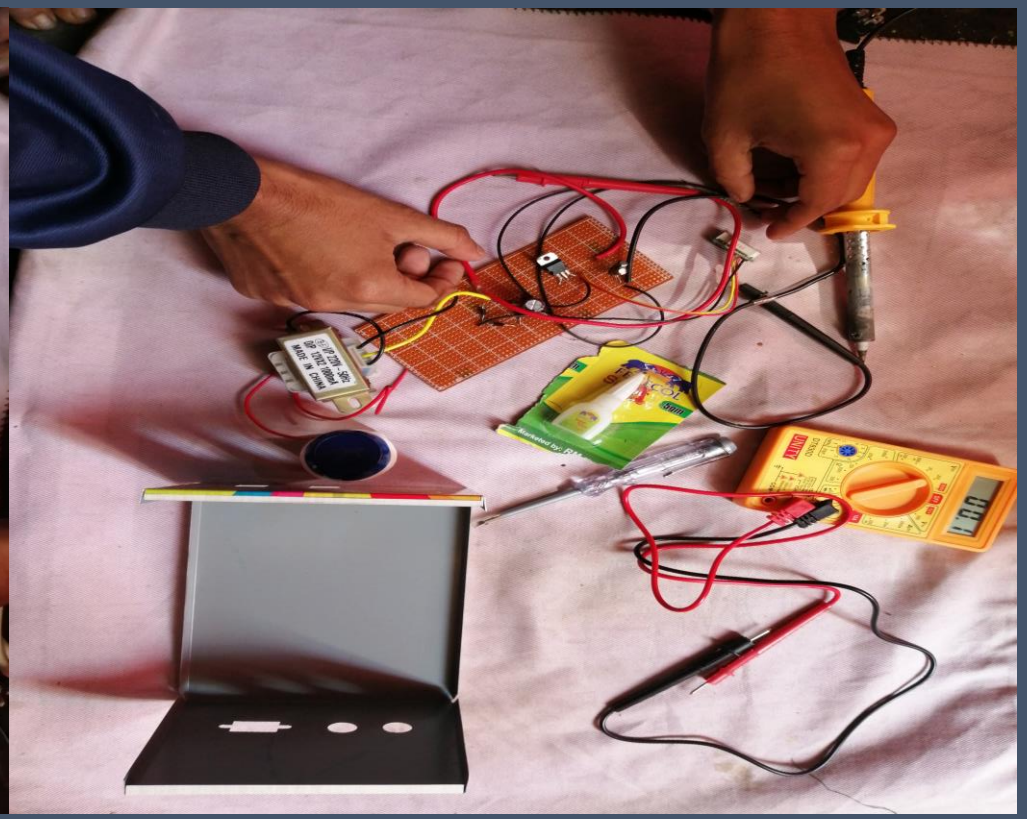
BUILD OF MATERIALS (BOM)

EQUIPMENTS	BDT
❖12 volt Transformer	100
❖230 Volt Switch	10
❖4 IN4007	8
❖4-32 Voltmeter	120
❖L7812 cv	15
❖PCB	15
❖600 ohm ,1K ohm	5
❖LED	5
❖470 , 1 microF Capacitor	5
❖Heat Sink	10
❖Probes	20
❖Wires	20

Total : 343

CREATING A L7812 FIXED VOLTAGE REGULATOR





L7812CV VOLTAGE REGULATOR

A 7812 is a linear regulator, and does not step up the input voltage if the input is below the output (for that you need a DC-DC boost regulator). The input voltage must be above the output. All linear regulators have a minimum dropout voltage, or difference.

The 7812 is not a LDO (low-dropout regulator), as the typical dropout voltage is around 2 volts. (An LDO might have a dropout voltage of 0.7 volts).

On page 6 of the datasheet, the maximum dropout voltage Vd is listed as 2.5 volts, meaning you need a minimum of 14.5 volts input to the device to guarantee an output of 12 volts

CALCULATING DROPPED OUT VOLTAGE

V(dopped out)$= v1 - v2 \ volt$

V(dopped out)$= 15 - 12 \ volt$

V(dopped out)$= 2.0 volt$